

CLAIMSWhat is claimed is:

1. A resin composition that is storable at ambient temperatures, said resin composition forming a cured resin when exposed to a curing agent and heated to a curing temperature that is higher than said ambient temperature, said resin composition comprising a liquid part including one or more liquid thermosetting resins and a solid part that comprises particles of one or more solid thermosetting resins wherein said solid part is dispersed within said liquid part, and wherein said particles have a melting point that is above said ambient temperature and below said curing temperature, said liquid part further comprising a gelation agent that is present in a sufficient amount to form said liquid part into a gel that is sufficiently gelatinous to maintain said particles in suspension within said liquid part at said ambient temperatures, said gelation agent having a melting temperature that is below said curing temperature and wherein the viscosity of said resin changes from a high viscosity state to a low viscosity state when the temperature of said resin composition is increased from said ambient temperature to said curing temperature and wherein said high viscosity state is substantially more viscous than said low viscosity state.

2. A resin composition according to claim 1 wherein the difference in viscosity between said high viscosity state and said low viscosity state is at least 10 Pas.

3. A resin composition according to claim 1 wherein the difference between said ambient temperature and said curing temperature is between 10°C and 60°C.

4. A resin composition according to claim 3 wherein the difference in viscosity between said high viscosity state and said low viscosity state is at least 10 Pas.

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5. A resin composition according to claim 1 wherein the viscosity of said resin composition in said high viscosity state is between 20 Pas and 70 Pas and wherein the viscosity of said resin composition in said low viscosity state is between 0.1 Pas and 10 Pas.

6. A resin composition according to claim 1 wherein said liquid part further comprises a curing agent

7. An uncured resin composition that is suitable for storage at ambient temperatures, said uncured resin composition comprising:

- a porous body comprising an exterior surface and interior surfaces located within said porous body that define interstitial spaces located with said porous body;

- a resin component located within said interstitial spaces and/or at said exterior surface of the porous body to provide wet surfaces that are in direct contact with said resin component and/or dry surfaces that are not in direct contact with said resin component, said resin component forming a cured resin when exposed to a curing agent and heated to a curing temperature that is higher than said ambient temperature, said resin component comprising a liquid part including one or more liquid thermosetting resins and a solid part that comprises particles of one or more solid thermosetting resins wherein said solid part is dispersed within said liquid part, and wherein said particles have a melting point that is above said ambient temperature and below said curing temperature, said resin component further comprising a gelation agent that is present in a sufficient amount to form said liquid part into a gel that is sufficiently gelatinous to maintain said particles in suspension within said liquid part at said ambient temperatures, said gelation agent having a melting temperature that is below said curing temperature and wherein the viscosity of said resin component changes from a high viscosity state to a low viscosity state when the temperature of said resin component is increased from said ambient temperature to said curing temperature and wherein said high viscosity state is substantially more viscous than said low viscosity state; and

- a curative component comprising a curing agent for said resin component, said curing agent being separated from said resin component during

storage of said uncured resin composition at said ambient temperatures, wherein the viscosity of said resin component at said high viscosity state is sufficient to prevent a substantial amount of said resin component from flowing into or out of said interstitial spaces and/or away from the exterior surface of said porous body and wherein the viscosity of said resin component at said low viscosity state is sufficient to allow said resin component to flow into contact with said dry surfaces and/or curative component.

8. An uncured resin composition according to claim 7 wherein said curative component is located at the interior surfaces of said porous body and said resin component is located at said exterior surfaces of said porous body such that said interior surfaces of said porous body are substantially dry surfaces.

9. An uncured resin composition according to claim 7 wherein said porous body comprises a fiber component comprising a plurality of fibers wherein each of said fibers comprises a fiber surface, said fibers being oriented to provide said porous body comprising an exterior surface defined by said fiber surfaces located at the exterior surface of said porous body, said porous body further comprising interior surfaces defined by said fiber surfaces located within said porous body, said interior surfaces further defining said interstitial spaces located within said porous body.

10. An uncured resin composition according to claim 9 wherein said fiber component comprises a fiber bundle.

11. An uncured resin composition according to claim 10 wherein said fiber component comprises a plurality of fiber bundles.

12. An uncured resin composition according to claim 11 wherein said plurality of fiber bundles are in the form of a fabric or unidirectional tape.

13. An uncured resin composition according to claim 12 where said plurality of fibers form a fabric or unidirectional tape having a first side and a second

side that define the exterior surface of said porous body and wherein said resin component is located only at the first side of said fabric or unidirectional tape and said curative component is located on said second side of said fabric or unidirectional tape.

14. An uncured resin composition according to claim 12 where said plurality of fibers form a fabric or unidirectional tape having a first side and a second side that define the exterior surface of said porous body and wherein said resin component is located at both the first side and second side of said fabric or unidirectional tape and said curative component is located at the interior surfaces of said fabric or unidirectional tape.

15. An uncured resin composition according to claim 7 wherein said resin component is reactive with said curative component at said ambient temperatures, said curative component being in the form of a coating that covers at least a portion of the interior and/or exterior surfaces of said porous body to provide a plurality of curative coating surfaces, said composition further comprising a removable reaction barrier located between said resin component and said curative coating surfaces to prevent contact of said resin component and said curative coating surfaces during storage of said resin and fiber composition at ambient temperatures.

16. An uncured resin composition according to claim 15 wherein said porous body comprises a bundle of fibers having said exterior surface and wherein said resin component is located only at the exterior surface of said porous body and said removable reaction barrier is located between the exterior surface of said porous body and said resin component.

17. An uncured resin composition according to claim 16 wherein said plurality of fiber bundles are in the form of a woven fabric.

18. An uncured resin and fiber composition according to claim 17 where said plurality of fibers form a woven fabric having a first side and a second side that define the exterior surface of said porous body and wherein said resin component is

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located only at the exterior surface of said woven fabric and said removable reaction barrier is located between the exterior surface of said porous body and said resin component.

19. An uncured resin composition that is suitable for storage at ambient temperatures, said uncured resin composition comprising:

a resin component that forms a cured resin when exposed to a curing agent and heated to a curing temperature that is higher than said ambient temperature, said resin component comprising a liquid part including one or more liquid thermosetting resins and a solid part that comprises particles of one or more solid thermosetting resins wherein said solid part is dispersed within said liquid part, and wherein said particles have a melting point that is above said ambient temperature and below said curing temperature, said resin component further comprising a gelation agent that is present in a sufficient amount to form said liquid part into a gel that is sufficiently gelatinous to maintain said particles in suspension within said liquid part at said ambient temperatures, said gelation agent having a melting temperature that is below said curing temperature and wherein the viscosity of said resin component changes from a high viscosity state to a low viscosity state when the temperature of said resin component is increased from said ambient temperature to said curing temperature and wherein said high viscosity state is substantially more viscous than said low viscosity state;

a curative component comprising a curing agent for said resin component, said curing agent being separated from said resin component during storage of said uncured resin composition at said ambient temperatures; and

a removable reaction barrier located between said resin component and said curative component to keep said curing agent separated from said resin component during storage of said resin composition at said ambient temperature.

20. A resin composition according to claim 19 wherein the difference in viscosity between said high viscosity state and said low viscosity state is at least 10 Pas.

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21. A resin composition according to claim 19 wherein the difference between said ambient temperature and said curing temperature is between 10°C and 60°C.

22. A resin composition according to claim 21 wherein the difference in viscosity between said high viscosity state and said low viscosity state is at least 10 Pas.

23. A resin composition according to claim 19 wherein the viscosity of said resin composition in said high viscosity state is between 20 Pas and 70 Pas and wherein the viscosity of said resin composition in said low viscosity state is between 0.1 Pas and 10 Pas.